A New RAS G12D Specific Rabbit Polyclonal Antibody for Immunohistochemical FFPE Application

Shinn-Tsuen Lin¹, Daniel Lin², Johan Chien², Jimmy Chiü², Ryan Kuo², Amy Lin², Chi-Kuan Chen³,
GeneTex International Corp.¹; Hong Jing Biotech Inc.²; Department of Laboratory Medicine, Mackay Memorial Hospital, Taiwan³.

Abstract Number: 1370

Conclusions

Determining RAS mutation status is considered as prognostic factor for colorectal cancer patients in anti-epidermal growth factor receptor(EGFR) antibody therapy. Because genetic testing remains costly and time consuming, it is necessary to develop mutation specific antibody for immunological analysis. However RAS G12D mutation antibody for immunohistochemical staining is not available till now. Here we report a novel RAS G12D rabbit polyclonal antibody (GTX132407) for immunochemistry (IHC) testing, which was developed by cooperating with GeneTex In. Based on analyzing 15 clinical colorectal cancer specimens, the result of IHC staining using RAS G12D mutation specific antibody (GTX132407) was correlated with genetic testing of RASG12D mutation using ultrasensitive total RAS mutation screen kit [Hong Jing Biotechnology Inc. (FemtoPath)].

Material and Method

Immunohistochemistry:

Tissues: formalin-fixed and paraffin embedded (FFPE) human tumor tissues. RAS G12D mutation was determined by FemtoPath (Patent No. P2708-TW) mutation analysis.

Antibodies: RAS G12D (GTX132407, GeneTex Inc.)

Detection systems: OptiView DAB IHC Detection Kit on BenchMark XT fully automated IHC/ISH staining instrument (Ventana Medical Systems, Inc.)

Principle of FemtoPath

PCR Primer Design

\[ \text{GGTAGTTGGAGCTGGTGGCGGGAATATAAACTTGTGGTAGTTGG} \]

\[ \text{3'} - \text{TACTGACTTATATTTGAACACCATCAACCTCGAC} \]

\[ \text{CCACCGC5'} \]

Hybridization with wild type sequence

Hybridization with mutant type sequence

Result

RAS G12D Antibody Staining in Human colorectal cancer with G12D Mutation

Conclusions

The result showed that IHC testing with RASG12D specific mutation antibody could be a reliable tool for predicting RAS genetic mutation status.